

Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Walnut Creek

Waterbody Segment at a Glance:

County: Cedar
Nearby Cities: El Dorado Springs
Length of impairment: 1.0 mile
Pollutant: Biochemical Oxygen Demand (BOD) and Volatile Suspended Solids (VSS)
Source: El Dorado Springs Wastewater Treatment Plant (WWTP)



State map showing location of watershed

Propose to change NFR to VSS on the 2002 303(d) list

TMDL Priority Ranking: High

Description of the Problem

Beneficial uses of Walnut Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life and Human Health associated with Fish Consumption

Use that is impaired

- Protection of Warm Water Aquatic Life

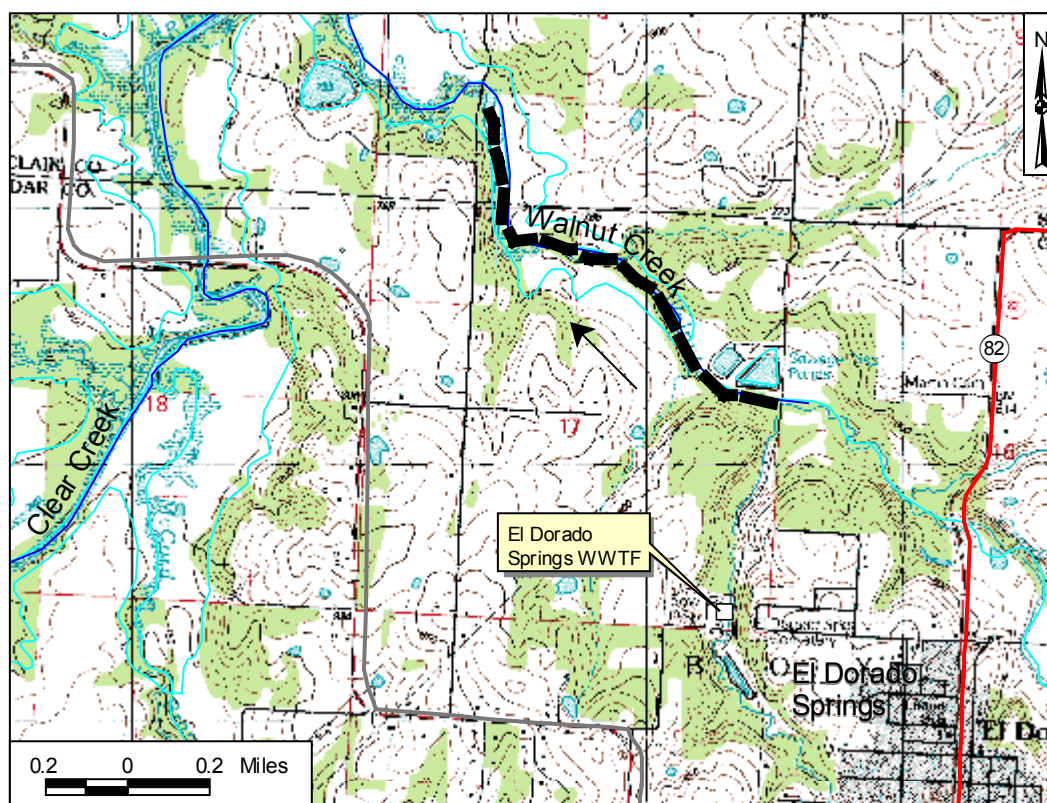
Standards that apply

- The Missouri Water Quality Standard, found in 10 CSR 20-7.031 Table A, for dissolved oxygen (related to BOD) in streams is 5.0 mg/L (milligrams per liter or parts per million).
- Standards for Volatile Suspended Solids may be found in the general criteria section of the WQS, 10 CSR 20-7.031(3)(A) and (C) where it states:
 - Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses.
 - Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.

Any waterbody that was listed for Non-Filterable Residue (NFR) in 1998 is now being listed as Volatile Suspended Solids (VSS). The listing gives a clearer picture of the specific sources contributing to the impairment. VSS are organic solids coming from wastewater treatment plants.

Walnut Creek shows low levels of dissolved oxygen downstream from the El Dorado Springs wastewater treatment plant (WWTP). Dissolved oxygen in the stream's water is reduced by wastewater high in Biochemical Oxygen Demand (BOD). Most aquatic organisms require high levels of oxygen to survive. There is also an accumulation of objectionable solids in the same stretch of the creek. VSS refer to particles that are suspended in water, like algae, or those that settle out, like the sewage sludge in Walnut Creek. When these solids settle onto the streambed, they smother natural substrates (stream bottom), aquatic invertebrate animals (like crayfish and water insects), and fish eggs. Like all wastewater discharges in Missouri, this WWTP has to meet the requirements of a discharge permit issued by the department. The department plans additional studies in this creek in 2002 and 2005. If these studies show that the stream is not meeting water quality standards, the discharge permit will be amended. Meeting the new requirements will result in improved water quality in Walnut Creek.

Impaired Portion of Walnut Creek in Cedar County, Missouri



--- Impaired Segment ← Direction of Flow

For more information call or write:

Missouri Department of Natural Resources

Water Pollution Control Program

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